Claims

What is claimed is:

1. A recurrent reflective synthetic filament yarn produced by the following process including the steps of:

melt-spinning a mixture of glass beads and a synthetic fiber resin through a spinneret, said beads being vacuum-metalized with a material having a reflection function;

positioning an electric field around the spinneret; and

passing said filament through the electric field before said filament is solidified, whereby said glass beads in said filament rotate so that said metalized parts of the glass beads all point in a same direction.

2. The yarn of claim 1, wherein said yarn filament comprises substantially 5 to 25 wt% of said glass beads.

3. The yarn of claim 1, wherein each of the glass beads is a spherical shape having a bead size of 30 to 50 μm, and a refractive index of 1.5 to 2.2.

4. The yarn of claim 1, wherein the material having the reflective function is selected from the group

consisting of aluminum, nickel, and silver.

5. A recurrent reflective synthetic filament yarn;

said filament including vacuum-metalizing spherical glass beads each having a bead size of 30 to 50 μm and a refractive index of 1.5 to 2.2, wherein 1/4 to 1/2 of an entire surface area of the spherical glass beads are vacuum-metalized with a material, said material having a reflection function;

said filament including a synthetic resin;

wherein 5 to 25 wt% of said filament is said glass beads and 95 to 75 wt% of said filament is said synthetic fiber resin;

wherein said filament is melt-spun through a spinneret;

said yarn produced by the following method including the steps of:

passing said filaments through an electric field around the spinneret before said filaments are solidified, so as to rotate the glass beads contained in the filaments such that metalized parts of the glass beads all point in a same direction.

6. The yarn of claim 5 wherein said spinneret having a nozzle and nozzle holes, said method comprising the steps

of:

installing a positive plate and a negative plate under the nozzle holes of the spinneret such that the positive plate and the negative plate face each other and are spaced from each other at an interval of one to five mm; and

applying a voltage of 3000 to 20000 V and a current of three to five mA to the positive plate and negative plate, thereby forming the electric field.

7. The yarn of claim 6, wherein the nozzle holes of the spinneret are aligned in one or two rows.

8. The yarn of claim 5, wherein the method comprising the steps of:

adding 0.2 to 0.5 wt% of dioctylphthalate as a softener and 0.2 to 0.5 wt% of Ca antiadditive as a dispersing agent into the synthetic fiber resin to uniformly mix the glass beads with the synthetic fiber resin, to provide softness to the synthetic fiber resin during the melt-spinning of a mixture of the glass beads and synthetic fiber resin, and to improve the softness of the recurrent reflective synthetic filament yarn.

9. The yarn of claim 6, wherein the method comprising the steps of:

adding 0.2 to 0.5 wt% of dioctylphthalate as a softener and 0.2 to 0.5 wt% of Ca antiadditive as a dispersing agent into the synthetic fiber resin to uniformly mix the glass beads with the synthetic fiber resin, to provide softness to the synthetic fiber resin during the melt-spinning of a mixture of the glass beads and synthetic fiber resin, and to improve the softness of the recurrent reflective synthetic filament yarn.